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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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| 08/908,867 | 08/08/97 | YOUNG | A 227/166 |

HM22/1010
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| EXAMINER | |
|---|---|
| HOLLERAN, A | |
| ART UNIT | PAPER NUMBER |
| 1642 | 29 |

DATE MAILED: 10/10/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

| Office Action Summary | Application No. 08/908,867 | Applicant(s) YOUNG ET AL. | |
|---|---|---|---|
| | Examiner Anne Holleran | Art Unit 1642 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *July 30, 2001* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *31-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *31-51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☒ Interview Summary (PTO-413) Paper No(s). *25* .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

1. The amendment filed July 30, 2001 is acknowledged.

Claims 1-11 and 20-30 are canceled.

Claims 31-51 are added.

Claims 31-51 are pending and examined on the merits.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections Withdrawn:***

3. All rejections of claims 1-11 and 22-30 are moot in view of the amendment canceling claims 1-11 and 22-30. However, the grounds of rejection that are applicable to new claims 31-51 are maintained. See below.

***Claim Rejections Maintained and New Grounds of Rejection:***

4. Claims 31-51 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 31-34 are indefinite because it is not clear what is encompassed by the term "exendin". The specification describes exendins as polypeptides found in the venom of Gila monster and the specification provides examples of exendin-3, exendin-4 and exendin (9-39).

However, the specification fails to provide guidance as to what compounds are included in the term "exendin". Thus, the scope of the claims cannot be determined.

Applicant argues that the examiner ultimately agree with applicants in the telephonic interview of May 25, 2001 that the term "exendin" defines a genus of compounds. This is not what the examiner agreed to. The examiner agreed that absent structural definitions of the scope of the term exendin that precise functional language may be used to define the scope of the term. The examiner has also *clearly not* noted that the disclosure of exendin-3 and exendin-4 are representative of the genus of "exendins" (see Office action mailed 2/27/2001, pages 6-7).

Claims 43-51 are indefinite because is it not clear what is encompassed by the term "exendin analogue" or "exendin derivative". These terms are indefinite because "exendin" itself is indefinite and because the terms "analogue" and "derivative" encompass compounds that may have only as little as one molecule or one amino acid in common.

Claims 47-50 are indefinite because they are drawn to methods using exendin derivatives having various percentages of sequence similarity to sequences that are not defined. As explained above, the term "exendin" does not structurally define a genus of compounds. Without a structure (amino acid sequence), how can one determine a percentage of sequence similarity?

5. Claims 31-51 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for methods comprising administering exendin-3, exendin-4, the compounds encompassed by SEQ ID NO: 38, or the compounds encompassed by SEQ ID NO: 39, does not reasonably provide enablement for methods comprising administering exendins,

exendin agonists, exendin derivative, exendin analogs. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Factors to be considered in determining whether undue experimentation would be required to practice the full scope of the claimed inventions are: 1) quantity of experimentation necessary; 2) the amount of direction or guidance presented in the specification; 3) the presence or absence of working examples; 4) the nature of the invention; 5) the state of the prior art; 6) the relative skill of those in the art; 7) the predictability or unpredictability of the art; and 8) the breadth of the claims. See Ex parte Forman, 230 USPQ 546, BPAI, 1986.

The claimed methods are broad in scope because the claims are drawn to methods using "exendins", "exendin agonists", "exendin analogues" and "exendin derivatives". The specification merely teaches that exendins are found in the venom of the Gila monster, but fails to supply evidence that the prior art has defined a genus of peptides referred to as "exendins". Without a definition of the scope of the term "exendin", the specification fails to provide guidance concerning the scope of "exendin analogue" or "exendin derivative". Furthermore, the terms "analogue" and "derivative" are defined with open language and appear to encompass compounds that have structural similarity to, or that have a similar functional effect as, any compound that might be defined as an exendin.

In contrast, the specification confines its teachings of exendins that are useful in the claimed methods to exendin-3 and exendin-4. Thus, the broad scope of the claims is not supported by the narrow scope of the teachings of the specification. The assertion in the specification that exendin-3 and exendin-4 appear to bind to an "exendin" receptor that is

different from the art-known GLP-1 receptor, cannot be extrapolated to all possible compounds that may be encompassed by the terms "exendin", "exendin agonist", "exendin analogue" or "exendin derivative". Furthermore, the claims lack such a functional limitation that would limit the scope of the methods to those methods using "exendins", "exendin agonists", "exendin analogues" or "exendin derivatives" that bound to a specific "exendin" receptor that is not the GLP-1 receptor.

Claims 43-46, where the exendin analogue or exendin derivative employed in the claimed methods has various ranges of activity of an exendin (range from 1% to 10,000%) are not enabled by the specification because exendins may have multiple "activities" and because the specification only teaches one activity for a limited number of examples. Claims 47-50, where the exendin analogue or derivative has various ranges of amino acid sequence similarity to any exendin, where the amino acid sequence of the an exendin is not defined in the claims, are not enabled by the specification because the specification fails to teach how to make the exendin analogues or derivatives as claimed.

Applicants argue that applicants are not required to know or to demonstrate physiological mechanisms of action. Applicants assert that the specification demonstrates that exendins and exendin agonists reduce gastrointestinal motility. This argument is not found persuasive because the specification only shows that exendin-3 and exendin-4, and leu14, phe25-exendin 4 inhibit gastrointestinal emptying. These compounds are not representative of the full scope of terms "exendin", "exendin agonist", "exendin analogue" or "exendin derivative". The fact that applicant demonstrates how to evaluate gastric emptying does not enable one of skill in the art to practice the full scope of the claim invention but only to test compounds. While applicant may

not be required to know or demonstrate physiological mechanisms of action, the lack of such knowledge, or the lack of such demonstration makes it impossible for one of skill in the art to practice the full scope of the invention, where the methods use any compound that may be encompassed broadly under the umbrella of "exendin", "exendin agonist", "exendin analogue" or "exendin derivative", without undue experimentation. The specification appears to merely provides an invitation to research to practice the full scope of the invention.

6. Claims 33-34 and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Dupre et al (Dupre, J. et al., Diabetes, 44: 626-630, 1995) as evidenced by Goke et al (Goke, R et al, J. Biol. Chem., 268(26): 19650-19655, 1993) or Rai et al (Rai, A. et al, Am. J. Physiol., 265: G118-G125, 1993).

Applicant's arguments have been considered but are unpersuasive. Claims 33-34 and 43 encompass methods drawn to using exendin derivatives and analogues. Because a derivative, may be a compound that comprises only one amino acid of an "exendin", the teachings of the prior art meet the limitations of the claims.

7. Claims 31-34 and 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dupre et al (supra) in view of either Chernish et al (U.S. Patent 3,862,301, Chernish, S.M. et al., issued January 21, 1975) or Kolterman et al (WO 95/07098, Koleterman, O. et al., published March 16, 1995) and further in view of Eng (U.S. Patent 5,424,286, issued June 13, 1995).

Applicant's arguments have been considered but are unpersuasive. Because of the breadth of the terms "analogue" and "derivative", the rejection is maintained, because GLP-I(7-36)amide falls within the scope of an exendin "analogue" or "derivative".

*Conclusion*

**No claim is allowed**. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the Office should be directed to Anne Holleran, Ph.D. whose telephone number is (703) 308-8892. Examiner Holleran can normally be reached Monday through Friday, 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Caputa, Ph.D. can be reached at (703) 308-3995.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist at telephone number (703) 308-0196.

Anne L. Holleran
Patent Examiner
October 7, 2001

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